REMARKS/ARGUMENTS

There are no amendments to the specification, claims or drawings herein.

In the Claims, Claims 1-32 are pending. Claims 16-26 were allowed. Claims 1-3 and 27-29 were rejected. Claims 4-15 and 30-32 were objected to. Reconsideration is respectfully requested.

The Examiner rejected Claims 1 and 27-28 under 35 U.S.C. 102(b) as being anticipated by Marks, U.S. Pat. No. 5,758,273 (hereinafter 'Marks').

Applicant traverses the rejection of Claims 1, 27 and 28 on the grounds that the Examiner failed to establish a *prima facie* case of anticipation with respect to Marks. In particular, Applicant submits that Marks does not disclose, explicitly or implicitly, "each element of the claim under consideration" (*W.L. Gore & Associates v. Garlock*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983)) and further Marks does not disclose the claimed elements "arranged as in the claim" (*Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984)), as required by the Federal Circuit for *prima facie* anticipation under 35 USC 102.

Marks discloses, "[a] system and method for adjusting the dynamic range of a receiver in a communication system" (Marks, Abstract, lines 1-2). According to Marks, "an input signal is attenuated by a calculated amount before the input signal is provided to a mixer in the receiver" (Marks, Abstract, lines 2-4). Further, Marks discloses, "[t]he attenuation amount is set so that reciprocal mixing noise caused by mixing the input signal with the local oscillator phase noise in the mixer is reduced until the total noise is the receiver noise floor" (Marks, Abstract, lines 4-8).

However, Marks fails to disclose that recited in Applicant's base Claims 1 and 27, contrary to the Examiner's contention. For example, Marks fails to disclose, "[a] method of extending dynamic range of a test system that has a receiver channel", as recited in Applicant's Claim 1. Instead Marks discloses a "method for adjusting the dynamic range of a receiver channel in a communication system" (Marks, Abstract, lines 1-2), as pointed out above. Likewise, Marks fails to disclose, "[a] test system having extended dynamic range," as recited in Applicant's Claim 27.

Moreover, Marks does not disclose, "compensating for an effect that compression of the receiver channel has on a magnitude response and a phase response of the receiver channel," as recited in Applicant's Claim 1, contrary to the Examiner's contention. Instead, at Col. 1, lines 44-47 of Marks, which was relied upon by the Examiner, Marks merely defines a "receiver (1dB) compression point". The term and its definition are consistent with that known in the art and would be familiar to the skilled artisan.

Further, at Col. 2, lines 21-25, also relied upon by the Examiner, Marks discloses, "[i]t is yet another object of the present invention to provide a novel system and method of adjusting the dynamic range of a receiver in which the input signal is attenuated ... the receiver (thermal) noise floor". However, nowhere in that disclosed by Marks is there reference to, explicitly or implicitly, either "an effect that compression of the receiver channel" may have on either the "magnitude response" or the "phase response" of the receiver channel or to "compensating" therefor, as recited in Applicant's Claim 1.

In particular, Marks never even discloses any of a "magnitude response", a "phase response", or "an effect that compression has on" the magnitude and phase responses. Moreover, Marks does not disclose "compensating for" such a compression effect. The only reference Marks makes to "phase" is with respect to "phase noise", specifically referring only to "local oscillator phase noise" and "synthesizer phase noise". As such, the skilled artisan would readily recognize that Marks is clearly not disclosing a receiver channel phase response.

Marks does disclose "adjusting" by attenuating the input signal (See Marks, col. 2, lines 21-25). However, there are nontrivial differences between the 'compensation' claimed by Applicant and the "adjusting" disclosed by Marks. The skilled artisan would not confuse "adjusting" according to Marks with "compensating", especially in the context of "compensating for an effect that compression ...", as claimed by Applicant in Claim 1. In fact, Marks explicitly discloses attenuating the signal at an input of the receiver (see Marks, Abstract, lines 2-4) such that compression of the receiver channel of Marks is even unlikely to occur in the system. As such, Marks at least fails to disclose each element recited in Applicant's Claim 1.

Regarding Applicant's base Claim 27 and Claim 28 that is dependent therefrom, Marks fails to disclose any of "magnitude data and phase data", "a controller that processes" the magnitude and phase data, or a computer program in any form, "that compensates for an effect on the generated data caused by the receiver channel being compressed," as recited therein. For example, as discussed above, Marks attenuates an input signal, thereby obviating compression of the disclosed receiver channel. As such, in addition to not disclosing receiver compression, Marks would not have a need to 'compensate for an effect' of the compression, or even disclose or suggest it.

At Col. 4, lines 53-57 of Marks, relied upon by the Examiner, Marks discloses, "[a] digital bus may be provided between converter 20 and attenuator 16 that may be controlled with a separate control processor (not shown) to scale the signal ...". As such, Marks is clearly disclosing the control processor for controlling the signal attenuation and not "a controller that processes magnitude data and phase data", as recited in Applicant's Claim 27. In particular, the attenuator being controlled according to Marks is clearly an element of the receiver channel and not data produced by the receiver channel (See Marks, FIG. 1, element 16). As such, Marks at least fails to disclose each element recited in Applicant's Claim 27.

Regarding Applicant's Claim 28, Marks fails to disclose, "a power limiter ... caused by the limiter being compressed," as recited therein, contrary to the Examiner's contention. At Col. 4, lines 52-54 of Marks, which was relied upon by the Examiner, Marks discloses that element '16' is an "attenuator 16 that may be controlled". Marks further discloses in FIG. 1 that the attenuator 16 may be implemented as an AGC (i.e., adjustable gain amplifier). An attenuator, as disclosed and employed by Marks, is an inherently linear gain control device. Moreover, Marks never suggests that the attenuator 16 performs in any manner other than as a linear gain control device. The attenuator 16 of Marks clearly is not a "power limiter", as defined and claimed by Applicant. Moreover, the skilled artisan would not confuse the 'attenuator 16', disclosed by Marks and relied upon by the Examiner, with the power limiter recited in Applicant's Claim 28. As such, Marks at least fails to disclose each element recited in Applicant's Claim 28.

Hence, contrary to the Examiner's contention, there are many significant differences between that disclosed by Marks and that claimed by Applicant in Claims 1, 27 and 28. In fact, Applicant can discern little or no relationship or commonality between the disclosure of Marks and that recited in Applicant's Claims 1, 27 and 28. Given the many differences set forth above that clearly exist, a *prima facie* case of anticipation with respect to Marks has not been established. In particular, the Examiner failed to show that there is "no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention" as required by the Federal Circuit. *Scripps Clinic & Research Found. V. Genentech Inc.*, 927 F.2d 1565, 18 USPQ 2d 1001, 1010 (Fed. Cir. 1991). Therefore, the rejection of Claims 1, 27 and 28 under 35 U.S.C. 102(b) over Marks is unsupported by facts in evidence and must be withdrawn.

The Examiner rejected Claims 1 and 27 under 35 U.S.C. 102(b) as being anticipated by Apostolos, U.S. Pat. No. 5,079,735 (hereinafter 'Apostolos').

Applicant traverses the rejection of Claims 1 and 27 on the grounds that the Examiner failed to establish a *prima facie* case of anticipation with respect to Apostolos. In particular, Applicant submits that Apostolos does not disclose, explicitly or implicitly, "each element of the claim under consideration" (*W.L. Gore & Associates v. Garlock*, cited *supra*) and further Apostolos does not disclose the claimed elements "arranged as in the claim" (*Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, cited *supra*), as required by the Federal Circuit for *prima facie* anticipation under 35 U.S.C. 102.

Apostolos discloses a high dynamic range compressive receiver. Apostolos further discloses compensating non-ideal performance of a dispersive delay line used in the compressive receiver. In particular, according to Apostolos, "a modulation circuit (14) ... modulates the receiver input signal with compensation values equal to the ratio of the transfer function of an ideal linear dispersive delay line to that of the main compressive-receiver linear dispersive delay line (22)" (Apostolos, Abstract, lines 1-6). The dynamic range of the high dynamic range compressive receiver is "greatly extended" relative to a conventional compressive receiver because, "the modulator 14 and auxiliary dispersive delay line 16 compensate to a great extent for the nonlinearity of the main dispersive delay line 22", according to Apostolos

(Apostolos, Col. 4, lines 53-57). As such, not only is Apostolos disclosing a compensation for extending the dynamic range of a compressive receiver but Apostolos specifically identifies that the compensation addresses a non-ideal characteristic (i.e., nonlinearity) of the dispersive delay line used in the compressive receiver.

As the skilled artisan is well aware, a compressive receiver is a wide-band receiver that employs a dispersive delay line (DDL) to compress an input signal into a narrow pulse. A fast sweeping or "chirped" local oscillator (LO) preceding the DDL is employed to convert the input signal into a frequency modulated (FM) signal. By measuring a position or positions of the pulses generated from the FM signal, a frequency of the input signal may be determined with inherently fine-frequency resolution.

Moreover, dynamic range in the compressive receiver is limited by local maxima or "sidelobes" that bracket a central lobe of a transform or receiver response. As explicitly recognized by Apostolos, "... transforms of smaller signals whose magnitudes fall below that of the largest sidelobe of the highest-magnitude signal must be ignored since they cannot be distinguished from sidelobes" (Apostolos, Col. 1, lines 57-59). In other words, the dynamic range is limited with respect to small signals in the presence of larger signals. Apostolos further recognizes that non-ideal characteristics of components of the compressive receiver, most notably of the DDL, "manifest themselves as sidelobes, which further reduce the dynamic range" (Apostolos, Col. 2, lines 4-5). As such, the disclosure by Apostolos regarding compensation is entirely directed at compensating for the nonlinearities associated with the DDL that results in an extended dynamic range by reducing the manifested sidelobes associated therewith.

However, contrary to the Examiner's contention, Apostolos does not disclose that recited in either Applicant's Claim 1 or Claim 27. For example, Apostolos fails to disclose "compression of the receiver channel" or an effect thereof on "a magnitude response and a phase response", as recited in Applicant's Claim 1. Similarly, Apostolos does not disclose, "an effect on the generated data caused by the receiver channel being compressed," as recited in Applicant's Claim 27. There is no reference in the disclosure of Apostolos to "compression", as defined and claimed by Applicant.

Moreover, Apostolos does not disclose "compensating for an effect that compression ...", as claimed by Applicant, but instead discloses compensating for nonlinearities of the DDL in a compressive receiver. As such, the 'compensating' disclosed by Apostolos is entirely unrelated to and distinct from that claimed by Applicant.

Hence, the Examiner failed to show that there is "no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention" as required by the Federal Circuit. *Scripps Clinic & Research Found. V. Genentech Inc.*, cited *supra*. The rejection of Claims 1 and 27 under 35 U.S.C. 102(b) over Apostolos is unsupported by facts in evidence and must be withdrawn.

The Examiner rejected Claims 2-3 and 29 under 35 U.S.C. 103(a) as being unpatenable over Marks in view of Bell et al., U.S. Patent No. 5,491,548 (hereinafter 'Bell et al.'). The Examiner acknowledged that Marks, "does not appear to teach correcting data measured for one of a device under test and a signal under test using the test system wherein the test system is one of network analyzer or a spectrum analyzer". The Examiner contended that Bell et al., "teaches correcting data ... wherein the test system is one of network analyzer or a spectrum analyzer". The Examiner relied on Col. 8, lines 23-25 of Bell et al. for the contention. The Examiner concluded that it would have been obvious, "to modify the Marks invention to include the spectrum analyzer taught by Bell et al. ... in order to accurately reproduce optical signals (Col. 3, line 52)".

Applicant respectfully traverses the rejection under 35 U.S.C. 103(a) on the grounds that the Examiner failed to establish and properly support a *prima facie* case of obviousness with respect to Marks in view of Bell et al. (hereinafter 'the references'). Specifically, the Examiner did not show, with respect to the rejected claims, 1) "some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings"; 2) "a reasonable expectation of success" in modifying or combining the teachings of the references; and 3) that the prior art references "teach or suggest all the claim limitations", as required by the courts. MPEP, Section 2142, *Establishing a Prima Facie Case of Obviousness*. Moreover, the Examiner failed to establish that the teaching or suggestion to make the claimed

combination and the reasonable expectation of success are both "found in the prior art, and **not** based on applicant's disclosure". *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed.Cir.1991) (***emphasis*** added). In short, the Examiner's reasons for rejecting Claims 2-3 and 29 respectfully fail to meet even the minimum requirements necessary for establishing and maintaining *prima facie* obviousness with respect to the references.

Claims 2-3 are dependent from and include all of the limitations of base Claim 1. Claim 29 is dependent from and includes all of the limitations of base Claim 27. As is discussed above, Marks fails to teach or suggest all of the limitations of at least base Claims 1 and 27. Bell et al. do not add to the limitations lacking in the disclosure of Marks. Thus, a combination of Marks and Bell et al. fail to teach or suggest all of the limitations of at least base Claims 1 and 27. Since the combined references fail to teach or suggest all of the limitations of the base claims, the combined references similarly fail to disclose or suggest all of the limitations of the dependent Claims 2-3 and 29. Failure to teach or suggest all of the claim limitations, in and of itself, defeats a *prima facie* case of obviousness. See *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).

The rejection of Claims 2-3 and 29 under 35 U.S.C. 103(a) further lack a legitimate and supported suggestion or motivation to combine/modify the references. In particular, "[o]bviousness can ***only*** be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation ***to do so*** found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art" (***emphasis*** added). MPEP §2143.01 *Suggestion or Motivation to Modify the References*. "[T]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art ***also suggests the desirability*** of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)" (***emphasis*** added). MPEP §2143.01, cited *supra*. For a motivation to combine/modify to be legitimate and therefore, be employed to support a *prima facie* case of obviousness, there must be "evidence that 'a skilled artisan, ***confronted with the same problems as the inventor*** and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the

manner claimed'". *Ecolochem, Inc. v. Southern Calif. Edison Co.*, 227 F.3d 1361, 1375, 56 USPQ2d 1065, 1075 (Fed. Cir. 2000) (quoting *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1456 (Fed. Cir. 1998)) (***emphasis is*** added). "[E]ven when the level of skill in the art is high, the Board [or the Examiner] must identify specifically the principle, known to one of ordinary skill, which suggests the claimed combination. In other words, the Board [or the Examiner] must ***explain the reasons*** one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious" (***emphasis*** added). *In re Rouffet*, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998).

The Examiner's motivation to combine/modify in the instant rejection merely states without support or explanation, "in order to accurately reproduce optical signals". The Examiner refers to Col. 3, line 52, of Bell et al. wherein Bell et al. acknowledge that, "the optical receiver in such an optical signal measurement instrument needs to be capable of accurately reproducing optical signals that have been amplified by fiber amplifiers or the like" (Bell et al., Col. 3, lines 50-53). However, there is no relationship between this disclosure by Bell et al. and the problem solved by Applicant. Moreover, regardless of that disclosed by Bell et al. at Col. 3, line 52, there is no teaching, suggestion, or motivation in either Bell et al. or Marks for the specific combination/modification proposed by the Examiner. Likewise, the Examiner has provided no extrinsic evidence to support a contention that a teaching, suggestion, or motivation to make the proposed combination/modification was in the knowledge generally available to one of ordinary skill in the art. Furthermore, the prior art of record does not suggest the desirability of the combination/modification proposed by the Examiner. The Examiner has not demonstrated or provided evidence that the skilled artisan without knowledge of Applicant's invention, when confronted with the same problem would have selected either the references or the particular elements therefrom for combination/modification as proposed by the Examiner. Moreover, the Examiner has not even attempted to explain the reasons why one skilled the art would have been motivated to select and combine the references thereby making obvious Applicant's claims.

Hence, the Examiner simply has not provided a legitimate motivation to combine/modify the references in support of a *prima facie* case of obviousness. An absence of a legitimate or supported motivation to combine Marks and Bell et al., without more, is sufficient to defeat a *prima facie* case of obviousness with respect to Claims 2-3 and 29. Furthermore, given the lack of a supported motivation to combine the respective references, ***any*** consideration regarding what the respective combination may or may not disclose is moot. However, as discussed above, the combined references further lack a teaching or suggestion of all claim limitations, which obviates a finding of *prima facie* obviousness, in and of itself.

At least for failing to provide a legitimate motivation to combine/modify, or at least for failing to establish that all of the limitations of the rejected claims are disclosed or suggested, the Examiner's rejection under 35 U.S.C. 103(a) lacks proper support for a *prima facie* case of obviousness according to the courts. Thus, the rejection of Claims 2-3 and 29 under 35 U.S.C. 103(a) over Marks in view of Bell et al. must be withdrawn.

The present Office Action is a ***fourth*** Office Action ***following*** an Appeal Brief filed by Applicant. Moreover, two additional Office Actions preceded the filing of the Appeal Brief. No amendments to the claims have been necessitated by any of the aforementioned Office Actions. Applicant respectfully reminds the Examiner that, " ***the examiner bears the initial burden***, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability ... If the examination at the initial stage ***does not*** produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of patent" (***emphasis*** added). *In re Oetiker*, 977, F.2d 1443, 1445, 24 USPQ 2d 1443, 1444 (Fed. Cir. 1992).

Applicant appreciates the Examiner's recognition of the allowability of Claims 16-26. Applicant further appreciates the Examiner's recognition that Claims 4-15 and 30-32 would be allowable if rewritten in independent form. However, in view of a lack of *prima facie* support for the rejections of Claims 1-3 and 27-29, Applicant respectfully declines to amend Claims 4-15 and 30-32 at this time. Reconsideration is respectfully requested.

In summary, Claims 1-32 are pending. Claims 16-26 were allowed. Claims 1-3 and 27-29 were rejected and Claims 4-15 and 30-32 were objected to. For the reasons detailed above, rejected Claims 1-3 and 27-29 and objected to Claims 4-15 and 30-32 are in condition for allowance. It is respectfully requested that Claims 1-15 and 27-32 be allowed along with allowed Claims 16-26, and that the application be passed to issue at an early date.

Should the Examiner have any questions regarding the above, the Examiner is urged to contact the undersigned by telephone at the number given below, or John L. Imperato, Attorney for Applicant, Registration No. 40,026 at Agilent Technologies, Inc., telephone number (650) 485-5511.

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